



United Kingdom of Great Britain and Northern Ireland

EDICT OF GOVERNMENT

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BS NA EN 1992-1-2 (2004) (English): UK National
Annex to Eurocode 2. Design of concrete
structures. General rules. Structural fire design

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UK National Annex to Eurocode 2: Design of concrete structures —

**Part 1-2: General rules — Structural fire
design**

ICS 13.220.50; 91.010.30; 91.080.40

Committees responsible for this National Annex

The preparation of this National Annex was entrusted by Committee B/525, Building and civil engineering structures, to B/525/2, Structural use of concrete, upon which the following bodies were represented:

- Association of Consulting Engineers
- British Cement Association
- British Precast Concrete Federation Ltd.
- Building Research Establishment
- Concrete Society
- Department of Transport (Highways Agency)
- Institution of Civil Engineers
- Institution of Structural Engineers
- Office of the Deputy Prime Minister
- Scottish Building Standards Agency
- UK Steel
- Co-opted members

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National Annex (informative) to BS EN 1992-1-2:2004, Eurocode 2: Design of concrete structures — Part 1-2: General rules — Structural fire design

Introduction

This National Annex has been prepared by BSI Subcommittee B/525/2, Structural use of concrete. In the UK it is to be used in conjunction with BS EN 1992-1-2:2004.

NA.1 Scope

This National Annex gives:

- a) the UK decisions for the Nationally Determined Parameters described in the following subclauses of BS EN 1992-1-1:2004;
 - 2.1.3 (2) — 5.3.2 (2)
 - 2.3 (2)P — 5.6.1 (1)
 - 3.2.3 (5) — 5.7.3 (2)
 - 3.2.4 (2) — 6.1 (5)
 - 3.3.3 (1) — 6.2 (2)
 - 4.1 (1)P — 6.3 (1)
 - 4.5.1 (2) — 6.4.2.1 (3)
 - 5.2 (3) — 6.4.2.2 (2)
- b) the UK decisions on the status of BS EN 1992-1-2:2004 informative annexes;
- c) references to non-contradictory complementary information.

NA.2 Nationally Determined Parameters

UK decisions for the Nationally Determined Parameters described in BS EN 1992-1-2:2004 are given in Table NA.1.

NA.3 Decisions on the status of informative annexes

BS EN 1992-1-2:2004 informative Annexes A, B, C, D and E may be used in the UK.

NA.4 References to non-contradictory complementary information

The tabular methods for the design of columns described in BS EN 1992-1-2:2004, 5.3 are limited to braced structures. Guidance on unbraced structures is given in PD 6687:2005, Clause 4.

Bibliography

PD 6687:2005, *Background paper to the UK National Annexes to BS EN 1992-1-1 and BS EN 1992-1-2.*

Table NA.1 — UK decisions for Nationally Determined Parameters described in BS EN 1992-1-2:2004

Subclause	Nationally Determined Parameter	Eurocode recommendation	UK decision
2.1.3 (2)	Values of $\Delta\theta_1$ and $\Delta\theta_2$	$\Delta\theta_1 = 200$ K $\Delta\theta_2 = 240$ K	Use the recommended values
2.3 (2)P	Partial safety factor $\gamma_{M,fi}$	1,0 for both thermal and mechanical properties	Use the recommended value
3.2.3 (5)	Values for the parameters of the stress-strain relationship of reinforcing steel at elevated temperatures	Class N (Table 3.2a) or Class X (Table 3.2b)	Class N (Table 3.2a)
3.2.4 (2)	Values for the parameters of the stress-strain relationship of cold worked (wires and strands) prestressing steel at elevated temperatures	Class A or Class B in Table 3.3	Class A
3.3.3 (1)	Value of thermal conductivity λ_c	Limits defined in 3.3.3 (2)	The lower limit defined in 3.3.3 (2)
4.1 (1)P	Use of advanced calculation methods to satisfy 2.4.1 (2)P	None	Properly validated advanced calculation methods may be used
4.5.1 (2)	Value of moisture content k % below which spalling is unlikely to occur	3 %	Use the recommended value
5.2 (3)	Reference load level η_{fi}	0,7	Use the recommended value
5.3.1 (1)	Tabulated data for unbraced structures	None	None
5.3.2 (2)	Value of e_{max}	0,15 h (or b)	Use the recommended value
5.6.1 (1)	Web thickness	Class WA, WB or WC	WA
5.7.3 (2)	Additional rules on rotation capacity at supports for continuous solid slabs	None	None
6.1 (5)	Reduction of strength at elevated temperature for high strength concretes	For C55/67 and C60/75: Class 1 of Table 6.1N For C70/85 and C80/95: Class 2 of Table 6.1N For C90/105: Class 3 of Table 6.1N	The recommended classes should be used. However, alternative values may be used but only if satisfactory test evidence is available.
6.2 (2)	Methods to control spalling of high strength concretes	Methods A to D	Any of the Methods A to D or a combination of the methods may be used
6.3 (1)	Value of thermal conductivity for high strength concrete	Limits given in 3.3.3 (2)	The upper limit defined in 3.3.3 (2)
6.4.2.1 (3)	Value of factor k	1,1 for Class 1 of Table 6.1N 1,3 for Class 2 of Table 6.1N	Use the recommended values
6.4.2.2 (2)	Value of factor k_m	k_m values given in Table 6.2N	Use the recommended values

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